NavMed 369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN

Vol. 17 Friday, 18 May 1951 No. 10

TABLE OF CONTENTS

Circular Letters:

Chemical Defense: Civil defense agencies must be prepared to deal with all probable types of attack but must be especially alert to those types that are capable of inflicting heavy damage from long range, such as air attacks with the newer chemical warfare agents.

It is not believed that any chemical warfare agents except the nerve gases are adequate for long range attack. They are nearly colorless, essentially odorless liquids which yield highly toxic vapors on evaporation and range in volatility from nonpersistent to more persistent than mustard gas. The probable munition for long range attack is the aerial bomb loaded with nonpersistent nerve gas and a burster charge of high explosive.

Nonpersistent nerve gases are vaporized completely by detonation, and the vapors soon form an invisible cloud. Its exact behavior in a city is unknown, but it will drift downwind at the effective velocity of the wind at street level; it will grow in size, and its gas concentration will fall as turbulence, thermal currents and diffusion cause it to mix with uncontaminated air; eventually, it will be dissipated by dilution.

A hypothetical case will serve to illustrate the civil defense problems involved. Assume that this is an initial attack on a typical target city, delivered without adequate warning, by planes from a great height; that gas bombs are dropped over a 1 square mile area of the business district, forming a gas cloud of that size and about 10 meters in height and containing a concentration of gas such that breathing it for about 2 minutes would eventually prove fatal. If the weather is favorable and a 6 mile an hour breeze is blowing at street level, such a gas cloud may be expected to drift 3 miles downwind in the first 30 minutes and to carve a path 10 to 12 square miles in area.

People caught on the streets without access to gas masks or gas-proof shelters would become casualties in over more than 90 percent of this path. The highest concentrations of gas would occur at the downwind edge of the impact area, and the largest numbers of severe and fatal cases would occur in the impact area and in the first mile of the downwind path. About half as many such cases would occur in the second mile downwind, and severe cases, but few fatalities, would occur in the next one-half mile. In the area 3 miles downwind moderate and mild cases would predominate; beyond that area the effects would be relatively trivial.

It is probable that high explosive bombs will be dropped simultaneously with gas bombs, causing glass breakage and structural damage which would render people in the lower floors of buildings highly susceptible to gas. Unless systems that circulate air in buildings (heating, ventilating and air conditioning) are turned off promptly, floor levels above the top of the gas cloud will also be infiltrated with gas. On the lower floors, casualty rates may approach those on the streets; on floors above the cloud there should be fewer and less severe

casualties. If doors and windows are tightly closed and air-circulating systems turned off, intact buildings in areas downwind would offer some protection, particularly on nonventilated upper floors. Some gas leakage is almost inevitable and a rush of people indoors from the streets may admit gas. The gas concentration would be far lower, but more persistent, than that on the streets. The casualty effects of long exposures to low concentrations indoors can approach those of the shorter exposures to higher concentrations on the streets.

Surface vehicles in motion offer little protection except as a dubious means of escape from the path of the cloud. Ventilated subways with street-level air intakes are particularly vulnerable because high concentrations of gas would be sucked into underground tunnels and stations in the path of the cloud. Elevated railways are safe only at elevations above the top of the gas cloud.

Panic is a threat of major importance. The zone of panic may extend far beyond the area of actual danger from gas and may be the scene of many unnecessary casualties. Streets may be blocked and rescue efforts hampered.

Early rescue and resuscitation are imperative but difficult. In the hypothetical case cited, severe casualties and fatalities may be expected to appear over most of the impact area in the first 10 minutes, in the area 1 mile downwind in 10 to 20 minutes, in the area 2 miles downwind in 20 to 60 minutes and in the next one-half mile in 30 to 60 minutes. Thus, in the absence of effective protection there will be thousands of unconscious or disabled casualties requiring rescue and medical attention in the first hour, which is the effective period for initiating the resuscitation of the severe cases and of the otherwise fatal cases. Artificial respiration of the most severely affected may have to be continued 1 or more additional hours. The disabled must be evacuated to hospitals for close observation and treatment for several days; ambulant cases must be directed to outpatient clinics. The dead must be collected and moved to designated locations for identification.

The Defense. Defense against gas includes 3 essential principles of prevention: (1) the detection and recognition of the gas; (2) the warning of all persons in the danger zone; (3) the prompt use of individual or collective protection. If this were completely effective, there would be no need for rescue, resuscitation, treatment, evacuation and hospitalization. However, hospitalization will always be needed in proportion to failures of the other defense measures.

It is probable that the first knowledge of a nerve gas attack will come from the recognition of its effects on the initial casualties. Notable among the symptoms are immediate bronchoconstriction, with great difficulty in breathing, and pinpoint constriction of the pupils. Severe casualties rapidly become cyanotic, develop nausea and vomiting, fall unconscious and exhibit tremors; such symptoms are followed by clonic and tonic convulsions, until apnea and generalized flaccid paralysis supervene. Persons with advanced symptoms may

show profuse nasal discharge, massive salivation and incontinence of urine and feces. If the public is made aware of these impressive symptoms, a nerve gas attack will be recognized immediately. If none of these effects occurs in exposed individuals within a minute or two, the nerve gases may be ruled out.

Information of a chemical attack must be transmitted promptly to local civil defense headquarters. Local headquarters must act immediately to warn all persons in the downwind path of the gas cloud. This presupposes the existence of a control center manned with trained workers, a warning system, a distinctive gas alarm with which the public is familiar and a knowledge of what to do when the signal is heard.

If the city is not zoned for defense, a citywide signal must be sounded, and the "all clear" must be withheld until the gas cloud has passed out of the city. This presupposes that the Civil Defense Chemical Warfare Defense Service has organized, equipped and trained at least 1 mobile gas detection team, and that both the control center and detection team know how to predict the path of the gas cloud and how to track it across the city.

If the city is zoned for defense, the alarms need be sounded only in the bombed area and in sections downwind that lie in the probable path of the cloud. The control center must know the local weather report of wind direction and velocity to predict the danger zone.

Public instruction and practice are essential to avoid confusion and panic. The public should retire promptly to gas-proof shelters, if available. If shelters are not within easy reach, refuge should be sought on the upper floors of tall buildings. Air-circulating systems of all types should be shut off, and windows and doors must be closed. All unauthorized traffic into the danger zone, both surface and subway, must be halted. Subway stations and the streets downwind from the bombed area should be evacuated promptly, the people retiring to shelters or the tallest building at hand. Motor vehicles should be pulled as near to the curbs as possible before being deserted, leaving the centers of the streets open for civil defense traffic. Surface and subway trains standing in stations in the danger zone should load promptly and proceed out of the path of the gas cloud.

Evacuation of the edges and more distant areas of the danger zone may be possible before the gas arrives. This requires good judgment, on the spot instructions to the public (i.e., radios and loudspeakers) and control of traffic by police and civil defense authorities. As time for escape runs out, all remaining people must be gotten off the streets before the gas arrives.

The Civil Defense Chemical Warfare Defense Service must determine when areas are clear of gas and notify the control center when it is safe to sound the "all clear". At this signal it is safe to reenter the area, but people on the upper floors of buildings must not descend to lower floors until the buildings

have been ventilated. This service must be performed by civil defense personnel wearing gas masks and may take several hours, as many buildings are involved. Subways and vehicles also must be ventilated before they are entered.

If these preventive measures are carried out effectively, medical problems will be reduced to the minimum, and casualties will be confined largely to the bombed area and immediately downwind, where people were overcome before defensive or evasive actions were possible. If these measures are neglected or poorly executed, the rescue and medical problems will be staggering, and the loss of life may be high.

Minutes count heavily in nerve gas poisoning. Many severe casualties and some fatalities may be expected in the bombed area within 10 minutes. Nearly all the emergency treatment and resuscitation of these casualties must be performed by non-medical personnel; only a small fraction of the nurses and physicians needed can be expected to arrive in time to help these initial casualties. It is of the utmost importance that every civil defense worker be trained to give intramuscular injections of atropine and to administer artifical respiration.

Certain practical aspects of emergency treatment are amplified:

1. All civil defense personnel who enter the gassed area must wear gas masks until the area is free of gas. They should have rubber gloves, rubber overshoes (or boots) and a plastic raincoat available for use in areas contaminated (wetted) by persistent nerve gases; these need not be worn if the nerve gas present is of the nonpersistent type (no liquid contamination).

2. They must put on gas masks to enter gassed buildings that have not been ventilated.

3. The patient must be protected against further exposure to gas as soon as possible. The only means now available for mass application is the gas mask. Rescue and medical teams must carry extra gas masks for patients. This requirement is not large, as many areas will be clear of gas by the time the teams arrive.

4. Gas masks make manual artificial respiration more difficult but do not prevent its application. The few patients who can be treated with a mechanical resuscitator equipped with oxygen tanks are protected from gas while they breathe oxygen.

5. The most effective manual methods of artificial respiration have been shown recently to be the Holger-Nielsen and the hip roll-prone pressure methods. The former is less tiring over the long periods required for severe nerve gas cases.

6. Rescue and medical teams should carry a generous supply of atropine in a form ready for intramuscular injection. The average layman can be taught in a minute or two to give an intramuscular injection correctly.

7. Sterile technic, while desirable, should be abandoned without hesitation in order to give large numbers of injections rapidly. The few infections that may develop can be treated later.

8. Apneic patients should be given artificial respiration until cyanosis is overcome, before atropine is administered; otherwise, there is danger of precipitating a fatal ventricular fibrillation.

9. Drugs to control convulsions should be administered only by a physician.

10. Liquid contamination of the skin or clothing by persistent nerve gas is extremely dangerous and must be removed quickly. Clean the skin with an alkaline fluid (sodium carbonate or ammonia water) and remove contaminated clothing.

11. The order of priority for handling the advanced severe case is: (1) protect the patient from inhalation of gas; (2) start artificial respiration; (3) decontaminate the skin and remove contaminated clothing (if liquid contamination is present); (4) give atropine as soon as cyanosis is overcome; (5) control convulsions; (6) evacuate to the hospital when breathing is restored or evacuate under mechanical resuscitation.

12. Do not send ambulant patients to the hospital; administer one dose (2 mg.) of atropine and send them home or to the outpatient clinic. (J. A. M. A., 21 April '51, Col. J. R. Wood, MC, USA)

* * * * * *

The Potentialities of Biological Warfare Against Man: In this paper an attempt is made to arrive at a logical statement of a "theory of biological warfare" based on experimental observations and rationally organized epidemiological principles. The problem is limited to known disease agents and the potentialities of their effective use either by inhalation or ingestion, based on our knowledge of the epidemiology of airborne infections and of common-vehicle epidemics.

Airborne Infection. Knowledge accumulated during the past 15 years indicates that this mode of spread is a reality in the experimental laboratory and is known to be a common cause of accidental or artifically induced human infections. The importance of aerial contamination is indicated by the extreme

precautions that are being taken when highly infective agents are under study. Accidents have been associated with particular types of laboratory procedures, such as intranasal instillations, centrifugation of infectious agents and the grinding of tissues in the Waring Blendor. These procedures often produce invisible clouds of finely dispersed infectious aerosols which, if uncontrolled, can be carried on air currents throughout a large building.

At Camp Detrick, Maryland, studies have shown that even such simple routine procedures as removing a cotton plug from a flask, the transferring of cultures from one tube to another, the withdrawing of a hypodermic needle from a rubber-stoppered vial or blowing the last drop from a pipette produce aerosols of varying extent and concentration. These manifold opportunities for aerial contamination that exist in laboratories provide a ready explanation for the occurrence of accidental infection by the airborne route.

The relation between the size of inhaled particles and the depth of their penetration and retention in the respiratory tract has unique application to the theory of biological warfare. Particles larger than 5 microns in diameter are almost completely removed in the nose and upper respiratory passages. Below 5 microns in size, progressively increasing proportions of inhaled particles reach the terminal bronchioles and alveoli. Inhalation of large particles is essentially equivalent to a slow gastrointestinal instillation or ingestion, whereas inhalation of particles progressively smaller than 5 microns becomes increasingly similar to an intratissue or subcutaneous innoculation.

Airborne infection with infective agents such as the streptoccocus, diphtheria bacillus and the influenza viruses occurs universally throughout the world in endemic and epidemic forms. Thus, the resistance and immunity of a large portion of the population to them is high and they are not seriously considered as likely BW agents.

In contrast, many infectious agents, particularly those known to be serious hazards in the laboratory, do not normally invade these sites in the upper respiratory tract. Rather, the natural form of infection is a direct inoculation by insect bite, as with typhus fever, Rocky Mountain spotted fever and yellow fever, or by known breaks in the skin, as in cutaneous tularemia of rabbit hunters. The inhalation of these infectious agents in particles sufficiently fine to reach the alveoli of the lung thus becomes equivalent to a subcutaneous inoculation; and minute doses of these agents might induce active infection when inhaled in sufficiently small particles. These diseases are highly localized in their distribution and a very high proportion of the population of this country is known to be susceptible. They form a group that should receive first consideration as agents which might be employed in BW.

It should be emphasized that the upper limit to the size of particles that can reach the alveoli, 5 microns, is strikingly similar to the dimensions of

single bacterial cells, fungal spores, rickettsiae and virus elementary bodies. Using modern laboratory technics, many pathogenic agents may be grown in almost limitless quantities and may be dispersed into the air as single cells. When this occurs accidentally, as in laboratories, a wholly artificial, man-made situation is created whereby such infectious particles may reach the alveoli of the lung. The purposeful creation of such clouds is BW.

It would seem that no new principles are involved. If grinding infectious tissue in a Waring Blendor will contaminate a room, or if concentrating a suspension of pathogenic agents in a centrifuge will contaminate a whole building, such circumstances would be easy to reproduce. Furthermore, by utilizing atomizers or other disseminating devices, far greater concentrations of infectious aerosols could be produced with relatively simple equipment, such as could be carried in an ordinary suitcase. Therefore, an enemy saboteur could contaminate the air of any enclosed space where people congregate.

These same principles apply, on a larger scale, to the use of aerosol clouds over cities. Specially designed bombs, shells or other types of disseminating devices could create large clouds. Under appropriate weather conditions, such clouds would remain close to the ground and, like pollen, diffuse with the wind over wide areas and for many miles, or like smog, hang over a city for many hours.

Common Vehicle Epidemics. Our long familiarity with epidemics caused from contaminated water and food supplies makes it easy to comprehend how purposeful and malicious contamination could occur. The purposeful introduction of a relatively small volume of a highly concentrated suspension of essentially pure pathogenic agent could effectively contaminate a large part of a water distribution system. Any plumber or person with minimum sanitary engineering training could introduce with ease such a pathogenic suspension at many points along a distribution system. The exact point of the introduction would be exceedingly difficult to locate or detect by epidemiological means. A high incidence of casualties could be expected because of the large dosage of agent that can be attained.

Similarly, a saboteur inoculating a high concentration of certain pathogenic agents in the appropriate food at the appropriate time could almost certainly produce epidemics with high attack rates among those who consumed it. The only limitations of consequence on this form of warfare result from the accessibility of such food or water supplies to a subversive agent and the limited distribution of any food or water supply.

Such sabotage methods could also be applied to the toxins of Clostridium botulinum or other bacterial or vegetable toxins, or to any of a wide variety of chemical poisons. Biological agents, however, have the distinct advantage from the saboteur's point of view, because the extended incubation period would enable him to "do his business" and disappear, leaving few clues.

Therefore, the epidemiology of airborne infection and of common vehicle epidemics forms the basis for developing a theory of BW. Biological warfare could be employed against us effectively. The planning of appropriate defensive measures must not be delayed. (Pub. Health Rep., 30 March '51, A. D. Langmuir)

* * * * * *

Cat-scratch Fever: The occurrence of a disease entity incurred through cat scratches in a young adult male has prompted this report.

There are no reports in the English literature concerning "cat-scratch fever." It is a term first used by Dr. Lee Foshay, of Cincinnati, to describe lymphadenitis of unknown etiology following cat scratches. The disease is suggestive of, but much milder than, tularemia. A cat contact is invariable. Although it is a systemic disease associated with malaise, fever and other general symptoms of an infection, the brunt of the infection is borne by lymph nodes. Symptoms referable to other systems are usually minor and transitory. Occasionally, exanthems occur, resembling erythema multiforme. The case herein reported is the first to have exhibited erythema nodosum. There are no characteristic clinical or laboratory findings, except those that exclude adenopathy of known etiology. The infective agent has never been identified and is present in the pus from buboes and produces a specific skin reaction after it has been made into a skin antigen by the classical Frei procedure and injected intradermally into the patient. The disease is a self-limited one; thus far no specific therapy is indicated.

Debre and his co-workers have recently described this disease syndrome in the French literature under the name "La maladie des griffes de chat." These authors stated that they had studied 10 such cases but reported in detail only 1 case. They also noted a positive reaction to Foshay cat antigen and believed it to be specific. In their case report, a 6 1/2 year old child developed the syndrome of fever, inguinal adenopathy and local folliculitis after contact with a cat. Penicillin had no effect on the course of the disease, but it was their belief that aureomycin shortened the course of the illness.

It seems that present dangers of disease transmission by house cats are not well recognized. Since the cat, as well as other animals, shares many diseases or parasites with man, it is a reservoir host. Transmission of the disease to man depends on environmental factors and type of contact.

Tularemia has been reported by many authors as having been contracted through the bite of the domestic cat. This transmission is of a more mechanical nature, since the organisms may be present on cats' teeth after they have eaten infected animals. Rabies is not uncommonly found in cats, and a rabid cat is a serious menance to human beings. Cats may harbor this disease through their close contact with dogs and other lower animals that may have rabies. Stimson reported that of 588 animals diagnosed as positive for rabies over a 10 year

period, 34 were cats. Hull reported that at the laboratory of the Illinois State Department of Public Health there were 416 positive animal heads over a 4 year period, of which 18 were of cats. The incubation period was reported as 14 to 60 days. Hull states that the rabid cat hides itself in dark areas and comes forth for vicious attacks. The animal loses its voice and mews hoarsely. Later the appetite is lost, and there is progressive emaciation, paralysis and death.

Cat-bite and rat-bite fever are the same disease. The disease, also known as Sodoku (rat poison), occurs all over the world. The disease is characterized by recurrent episodes of fever associated with purplish macular eruption and lymphadenopathy. In 2 cases reported there was good response to novarsenobillon therapy.

Feline virus pneumonia and its possible relation to some cases of primary atypical pneumonia in man have been reported by Blake and his co-workers. The histologic characteristics of the pulmonary lesions in the cats, particularly the necrosis of the bronchiolar and alveolar epithelium, the predominant large mononuclear cell reaction early in the disease and the absence of pleural reaction pointed to a virus etiology.

Diphtheria has long been suspected, even by lay persons, as being carried by the domestic cat. Simmons noted that Karbinski in 1908 reported an outbreak of diptheria in 24 Angora cats, with 17 deaths. Karbinski further reported diphtheria in children infected after contact with cats.

Tuberculosis is uncommon among cats, especially in the United States. In European cats the incidence of infection varies with geographic location and is dependent on the prevalence of tubercle bacilli in the milk supply, but averages about 2 percent. Cats are resistant to human and avian types but are susceptible to the bovine type, with the digestive tract as the usual portal of entry. Hull quotes Dobson as having observed bovine tuberculosis in 11 of 505 cats examined in Edinburgh. The most common characteristic was emaciation. The disease process is usually of the miliary type. Open cutaneous lesions may occur; they are a potential source of tuberculosis to man, since these lesions contain numerous tubercle bacilli.

Brucellosis is another common disease that may be transmitted by cats. Bruce found in 22 cats 5 positive reactions; he isolated B. melitensis from the mesenteric lymph nodes of one.

At least 5 cases of typical murine typhus, including 1 laboratory infection probably acquired through the agency of cat fleas harbored by kittens obtained from a Texas feed store, were reported by Irons and his co-workers. It might be postulated that the fleas in question had acquired the infective agent from the kittens. Fleas were taken from two litter mates of the involved kittens, and typical murine typhus was obtained in male guinea pigs by inoculation of

suspensions of Ctenocephalides felis, the cat flea.

It is possible that cats may harbor spirochetes of leptospirosis as a result of eating infected rats. One might therefore be particularly wary of cats that frequent slaughterhouses, fisheries and similar areas.

Ringworm may be transmitted by cats. Roberts reported a kitten that infected 13 human beings with Microsporum felinum and also infected another kitten, which in turn infected a child and a dog. Other types of ringworm that may be acquired from cats are ringworm of the glabrous skin (Trichophyton circinata) and favus, a scalp infection caused by Achorion schoenleini, acquired by cats from rats.

Creeping eruption, caused by Ancylostoma braziliense, may be carried by cats. It has been suggested that cats be kept from places where people may go barefoot.

Pasteurellosis following cat-bite and scratch wounds has been reported in man, with isolation of the gram-negative coccobacillus Pasteurella septica. The organism inhabits the human respiratory tract, as well as that of lower animals. Cellulitis with regional lymphadenitis characterizes the infection.

Histoplasmosis has been reported as occurring spontaneously in 3 dogs and a cat; this fact appears to indicate these animals as of possible importance as a source of human infection. Callahan suggests that since a large number of the cases of histoplasmosis in the St. Louis areas have been in children who had been in close contact with pet animals, it is of some importance to recognize the disease as occurring in animal reservoirs. Summerhill identified intracellular parasites considered to be Histoplasma in the lungs and mesenteric lymph nodes of a cat. It has been suggested that, since the reported occurrence of histoplasmosis throughout the world is small, man-to-man transmission is unlikely and there may be an outside reservoir of the disease. The respiratory and gastrointestinal tracts have been suggested as the portals of entry.

Lay persons and physicians not infrequently speak of "blood poisoning" following cat scratches. It is possible that this septicemia may represent "cat-scratch fever." (New England J. Med., 12 April '51, W. E. R. Greer & C. S. Keefer)

Metabolic Effects of Anesthesia in Man. IV. Comparison of the Effects of Certain Anesthetic Agents on the Normal Liver: The toxic effects of chloroform on the liver are well known and feared. Studies on animals have suggested a similar role for other anesthetic agents, particularly the ethers. In dogs, 3 hours of anesthesia with divinyl ether or chloroform produced central necrosis of the liver in a large proportion of the animals studied; diethyl ether produced

similar, less severe and frequent changes. In monkeys, however, histologic changes were found only with chloroform, and then only when the anesthesia was preceded by a 3 day period of starvation, a situation that predisposes to liver damage in the dog or monkey or in man. Nevertheless, this work in animals is frequently cited as evidence against the use of ether anesthesia in man, especially in cases with liver disease, without taking into account demonstrated species differences.

Previous comparisons in man of the effect of anesthetic agents on liver function are few. In many instances a single test has been used. Some workers have found no significant difference in the effects of the common anesthetic agents on liver function, whereas others have stated that changes in liver-function test results were less frequent after cyclopropane or spinal anesthesia, or more frequent after tribromoethanol (avertin) anesthesia.

In view of these discrepant results, the present study was planned in an effort to compare the effects on human liver function of similar operations performed under ether, cyclopropane and spinal anesthesia. The groups of cases were carefully balanced by preoperative selection in an effort to make the anesthetic agent the chief variable in this complex human experiment, and a battery of liver-function tests were employed.

The purpose of this study was to establish the effects of these anesthetic agents on liver function in patients with normal livers. The cases selected met the following criteria: The age limits were 17 to 65, inclusive. The liver was not enlarged on physical examination. There was no history or physical evidence of gall-bladder disease, hepatitis, jaundice, diabetes, thyrotoxicosis or syphilis. There was no history of an excessive intake of alcohol. The nutritional status was good. There was no evidence of current infection of any sort. The retention of bromsulfalein 45 minutes after a dose of 5 mg. per Kg. of body weight had been administered was 5 percent or less.

Herniorrhaphies, vein strippings and major pelvic operations were chosen in order to avoid operative trauma to the liver and biliary tract as a complicating factor. An effort was made to balance the series for each type of anesthesia with approximately the same number of each type of operation and with operations of similar duration. Except for one case of carcinoma in situ of the cervix, no malignant lesions were included. When postoperative infection developed before completion of the tests the case was excluded from this series.

The battery of liver-function tests was performed before operation and on the 1st, 3d and 5th postoperative days in 34 patients. The tests used were: bromsulfalein test, intravenous hippuric-acid test, serum bilirubin, plasma prothrombin time, urine urobilinogen, serum alkaline phosphatase, and serum cholesterol and cholesterol esters.

The tests were performed in a fixed routine: The patient voided. This marked the start of the first urea-clearance period. The sodium benzoate was injected; time was again observed. The bromsulfalein was injected through the same needle and the time recorded. A blood specimen was drawn 45 minutes after the bromsulfalein injection for all chemical determinations, including the urea level for urea-clearance calculation. A urine specimen was collected 1 hour after the injection of the sodium benzoate. This specimen was used for the hippuric-acid determination and also as the first urea-clearance specimen. A timed urine specimen was collected approximately 2 hours after the first. This was used for the urobilinogen determination and also for the second urea-clearance specimen. The majority of urobilinogen specimens were collected between approximately 10 a.m. and noon.

Urine specimens could not be obtained on some days following operation, owing to the patient's inability to void satisfactorily. A few results are lacking because of technical accidents. A number of patients were discharged from the hospital before time for the 5th day postoperative tests. Those patients in whom the 5th day tests could not be done are included in the series because, in the series as a whole, all but 2 of the patients who showed postoperative impairment of liver function showed this impairment by the 1st or 3d postoperative day. In all but 1 of these "normal" patients the abnormal bromsulfalein retention was decreasing rather than progressing on the 5th day.

Five patients were discarded from the normal series because of postoperative infection. This was shown in all cases by sustained fever over 101°F and in all but one case by evidence of localized infection. These cases, as well as those discarded from the present series because of the preoperative finding of liver disease or liver-function abnormalities, will be discussed in a subsequent report.

In the 34 patients studied, abnormalities were present after operation in almost every case. The bromsulfalein retention was the most useful test. It was elevated in 18 of the 34 cases at some point in the postoperative period, at times reaching 15 to 30 percent retention. There was a striking lack of correlation between duration of anesthesia and incidence of abnormal liver function.

The conclusion is reached that there is no significant difference in ether, cyclopropane and spinal anesthesia in their effect on the normal human liver. It is probable that the changes in liver function observed represent a part of the organism's total reaction to stress rather than a toxic effect of the anesthetic agents employed. (New England J. Med., April 26, '51, C. W. Fairlie et al)

* * * * * *

A Metallic Femoral Head Prosthesis for the Hip Joint: The mechanics of the hip joint, involving the anatomic and physiologic characteristics of the acetabulum, head, neck and trochanter of the femur, create difficulties in surgical reconstruction, particularly in such conditions as fractures of the femoral neck in the extremely aged, aseptic necrosis of the femoral head and neck, painful partial ankylosis of the hip, disabling deformities of the femoral head and neck and tumors requiring excision of the femoral head and neck.

A practical substitute, an internal prosthesis not too difficult to introduce and dependable enough to permit unharmful weight bearing within 2 or 3 weeks, is a logical solution in many instances. Such a prosthesis should (1) not require time-consuming details of measurement and mechanics in technic of application; (2) be practical in construction and not too complicated mechanically; (3) provide permanently stable and dependable fixation to the femur; atrophic friable bone should not be a restriction to application of the prothesis; (4) permit adequate motion without pain or possibility of displacement or impingement; (5) maintain the muscle-propelling forces; (6) keep shortening of the leg at a minimum; (7) provide dependable stability and weight-bearing support for necessary practical functions of the hip; (8) use substances which must be enduringly tolerable to the tissues; (9) eliminate the need for a long period of immobilization by plaster, or by other means, because of such factors as age, muscle atrophy and other results of disease.

The author has devised a prosthesis which successfully meets these requirements. It is nicknamed the "door-knob hip", and is a single unit that requires no assembly or special tools. Its use involves no more surgical trauma than does use of the Whitman reconstruction operation. The material is vitallium, or No. 317 stainless steel, which is absolutely non-electrolytic. The prosthesis consists of a head, a neck, a supporting disk, a trochanteric support and a threaded intramedullary shank. It is locked against rotation by a small metal block with a set screw, firmly fixed to an accurately shaped notch in the upper edge of the bone shaft. A hooked support and a screw fix the transplanted trochanter and its attached muscles to the femur. The threaded shank, about 6 inches (15cm.) in length, is self-cutting and is shaped to screw snugly, by hand and wrench, into the medullary canal. It is adjustable to the right or the left hip. The head is shaped somewhat like a door knob. It is spherical except for a slightly flattened surface designed to prevent pressure on the tender cotyloid notch area of the acetabulum. This flattening also creates a cushioning pocket that relieves friction.

The head is made in various sizes and the neck in various lengths, approximating the head and neck of the femur for which it is to be substituted. The size should be selected to fit the acetabulum rather loosely. The length of the neck should be such that the stress in reduction of the head and the linear tension of the head in the acetabulum will not be too great. The neck of the prosthesis fulfills the requirements of length of the head and neck of the femur

but is shaped at an angle about 15 degrees more obtuse than the normal angle of the neck of the femur. This transmits a more direct weight-bearing line from the roof of the acetabulum through the head and into the shaft of the femur, thus eliminating ligamentous stress and muscular strain in maintaining equilibrium, motion and weight bearing. The disklike metal ledge is large enough to rest on the hard cortical bone on the cut end of the femoral shaft and thereby absorbs the greater portion of weight. The intramedullary shank is coarsely threaded as a self-cutting screw. It is large enough in diameter to occupy, tightly, the medullary canal without cutting into the cortex.

No especial apparatus is needed for seating the prosthesis except a simple wrench to assist the hands in turning the apparatus, which is smooth and becomes slippery. A reamer of suitable size may be used to start the threaded shank in the right direction into the medullary canal. A screw hole and a square-cornered notch are placed on the anterior and posterior aspects of the weight-bearing disk to receive a metal block and set screw which fits into the notch in the bone shaft of equal size to prevent rotation.

Following operation, no cast is applied. Buck's extension (10 pounds, or 5 Kg.) is used for 5 days with the leg in wide abduction and sandbags applied to prevent rotation. The patient may be turned by maintaining abduction. Exercises are begun after 5 days. The patient is given crutches in 10 days, and moderate weight-bearing may be permitted in 2 weeks. Special attention should be given to exercises which develop the rotators and abductors.

Over a period of 3 years, this hip joint prosthesis has given rise to no disappointing complications in the 12 cases which are reported, all with good results. (J. Internat. Coll. Surgeons, April '51, E. D. McBride)

* * * * * *

Cancer and the Dentist: Whether a patient with mouth cancer will live often depends on the alertness of the dentist. Since most persons visit their dentists periodically, early cancer often may be found during a routine dental examination. Moreover, most persons go to their dentists rather than to their physicians when they have symptoms in the mouth.

An increasing cancer awareness on the part of the dentist has, in part, helped lower the mortality rate of mouth cancer during the last 10 years. Deaths from mouth cancer can be reduced further by: (1) intensifying the public dental education program; (2) having the dentist become more familiar with the predisposing factors and the precursors of mouth cancer, and with the diagnosis of early mouth cancer. The factors that may predispose to cancer are infected gums, jagged teeth, ill-fitting dentures and excessive smoking. It is not known how much these factors contribute to cancer; however, the incidence of cancer is much lower in the well-kept mouth than in the neglected one.

The precursor of cancer of the mouth, leukoplakia, is a white patch on the mucosa. This patch is found most commonly along the bite line of the buccal mucosa and on the tongue. Early intraoral cancer is a small ulcerated lesion. It is red or reddish yellow in color and often has a ragged granular appearance. The early lesion may not be indurated, but as it grows, the tumor becomes firm. Pain and tenderness are present only when the lesion is invasive or secondarily infected.

As the lesion grows, it may proliferate inwardly or outwardly. The infiltrative type becomes depressed; it may fissure and have raised edges; the base, if extensive, may be necrotic. In another form of the infiltrative type of lesion, the mucosal ulceration is slight but the submucosal induration is extensive, giving a stony hardness to the region. The outwardly proliferating type projects irregularly and has a circumscribed base. Neither type is vascular; therefore, bleeding is minimal. The outwardly proliferating tumor has a more favorable prognosis.

Occasionally, a firm nonulcerated prominence is found in the mouth, usually on the hard palate. This form of lesion is an aberrant salivary tumor which arises from a minor salivary gland. The tumor often is encapsulated and should not be incised, for if the capsule is broken the tumor may spread and become secondarily infected. A biopsy specimen should be taken by aspiration.

The definitive step in detecting cancer is to biopsy immediately every red ulcerated area. To wait is dangerous, because the patient may not return, or he may delay going to another physician. A specimen for biopsy may be obtained by using a sponge, or by using a scissors or scalpel.

If the histologic report is positive for malignancy, the patient should be referred immediately to his family physician. If he has no family physician, he should be referred to an oncologist. The dentist should be sure the patient reaches a physician. If the histologic report is negative for malignancy and nonspecific for another disease, and if healing does not take place, another biopsy specimen should be taken. If the second report is negative, and the dentist is still uncertain of the diagnosis, the patient should be referred to his family physician.

Nearly all malignant tumors of the oral cavity are squamous cell carcinomas. These tumors have been divided histologically into grades 1, 2, 3, and 4. The cells in a grade 1 carcinoma are highly differentiated, having pearl formation and few mitotic figures. As the grade increases the cells are less differentiated. A grade 4 tumor is anaplastic and has many mitotic figures. The higher grade tumors grow rapidly and respond to irradiation. However, these anaplastic tumors are more likely to metastasize.

Generally, cancer in the anterior portion of the mouth is low grade, and cancer in the posterior portion is of a higher grade. Carcinomas of the lip

are most often grade 1, those of the floor of the mouth and the anterior portion of the tongue are mainly grade 2, and those of the posterior third of the tongue and of the tonsil are predominantly grade 2 + to 3. Grade 4 tumors, most commonly found in the tonsillar region, may occasionally appear anywhere in the mouth.

Treatment of malignant tumors of the mouth needs the combined skill of the dentist and the physician. A broad rule followed in the treatment of mouth cancer is to remove operable infiltrating lesions by surgery and to irradiate outwardly proliferating growths and tumors of grades 3 and 4.

While treatment is being planned, the dentist should clean the mouth. All infected teeth and those of questionable vitality should be removed. If irradiation is to be given, all teeth which will be directly in the roentgen ray beam should be extracted. Such dental care will lessen the incidence of postradiation osteomyelitis. Postradiation osteomyelitis may also be avoided by the use of intraoral roentgen therapy which obviates irradiating through the mandible. With the intraoral method, the x-ray cone is placed in the mouth and positioned on the lesion. If difficulty is encountered in inserting the proper sized cone in the mouth, obstructing teeth, even though healthy, should be extracted. Radium is used when the lesion cannot be covered by an intraoral cone or when intraoral x-ray equipment is not available.

The treatment for leukoplakia is both medical and dental. A serological test should be made to rule out syphilis. If ulceration is present, a biopsy specimen should be taken to rule out malignancy. While awaiting the results of the tests, the mouth should be cleaned, irritants removed, smoking forbidden and large doses of vitamin B given. All metallic fillings in the mouth should be of one type. If the leukoplakia persists and is not too diffuse, the patch may be fulgurated or peeled off with a scalpel. Recurrence is common, and periodic check ups must be maintained. (J. A. D. A., April '51, L. B. Goldman)

* * * * * *

Stellate Block as an Adjunct to the Treatment of Pulmonary Embolism: A voluminous literature has appeared concerning the use of anticoagulants and femoral vein ligation in thromboembolic disease. These measures, however, have been directed primarily toward preventing pulmonary embolism rather than at influencing the immediate effects of the emboli themselves. Little progress has been made in augmenting the meager list of measures that are of use in the treatment of the acute phase of the condition.

For immediate treatment operative technics and the use of drugs, general supportive measures and minor surgical procedures are available. The

Trendelenburg procedure for the prompt removal of a pulmonary embolus is a logical way to combat the lethal mechanisms of the asphyxia, failure of the right heart or reduced effective blood volume that may ensue. This operation, however, is a major undertaking and has seldom proved either practical or successful. Since surgery seems to offer so little hope of success in the early treatment of the condition, the use of drugs such as papaverine or atropine, or other measures that will improve the deranged physiology, must be resorted to.

In this paper clinical data concerning the use of stellate block as an adjunct to the immediate treatment of this frequently fatal condition are discussed and presented. Leriche, in 1937, was the first to advocate the procedure in the treatment of pulmonary embolism but, largely because of the earlier difficulties in technic, it has been used relatively infrequently, and has not been given an adequate therapeutic trial. The technic of stellate block, using the anterolateral approach, is simple, may be life-saving and is attended in general by no untoward sequelae.

The severity of the symptoms of pulmonary embolism may be out of proportion to the size and number of blood vessels occluded, and the outcome does not necessarily depend on the size of the obstruction. Leriche and his coworkers found that in 30 percent of 225 fatal cases only one branch of a lobar artery or one of several lobar arteries was blocked. They believe that death in this group was due to reflex sympathetic pulmonary vasoconstriction and that stellate-ganglion block might have been lifesaving.

Vascular spasm has been demonstrated in peripheral arteries distal to the occlusion of the main arterial pathway. It has also been shown that procaine sympathetic ganglion block or ganglionectomy will prevent vasospasm accompanying arterial occlusion. Potent sympathetic vasoconstriction can occur in the pulmonary vascular tree. This spasm of both arteries and bronchi may be extensive and may involve far more than the restricted pulmonary area ordinarily supplied by the occluded vessel; the heart and coronary vessels may also share in these changes. Such spasm can be released by stellate-ganglion block.

From the evidence of several authors, it is reasoned that the vagus and sympathetic trunks contain both afferent and efferent fibers and that normal vascular and bronchial tone depends on a balance between them. The pulmonary embolus initiates reflexes that alter this balance. Probably some of the preganglionic thoracic sympathetic nerves have their synapses at the level of their origin and pass directly to the lung. Procaine infiltration of the stellate ganglion will not affect these fibers but will block the postganglionic sympathetic nerves from the thoracic segments of the cord that have their synapses in the stellate or the middle cervical ganglia. Such a stellate-ganglion block on the apparently affected side alone will interrupt sufficient pathways to alter most of the deleterious reflexes caused by the embolus.

Anatomic dissections have shown that the distance between the middle of the transverse process of the 6th cervical vertebra and the upper pole of the stellate ganglion averages 4 cm. and that the distance from the lateral margin of this process to the sympathetic chain is 0.5 cm. The fascial planes of the neck in this area are such that 10 cc. of a 1 percent solution of procaine placed on or anterior to the anterior prominence of the 6th cervical vertebra will diffuse forward and downward to infiltrate the cervical sympathetic chain and the stellate ganglion. A Horner syndrome will result almost immediately, signifying the block of the cervical sympathetic fibers. With downward diffusion of the anesthetic agent to involve the stellate ganglion there is warming of the fingers on the blocked side. The authors' method of performing the block is a modification of the descending-infiltration technic of de Sousa Pereira and is essentially the same as that described by Caldwell, Broderick and Rose. This method largely obviates complications such as puncture of the pleura, subarachnoid space and great vessels and has the further advantage that it can be carried out with the subject in the supine or sitting position, thus as a rule requiring no moving of the patient. It does not, however, obviate the possibility of temporary paralysis of the recurrent laryngeal or cardiac-accelerator nerves on the same side; therefore they do not believe that bilateral stellate block should be carried out. Unilateral stellate-ganglion block was performed on 4 patients with pulmonary embolism, with dramatic relief of symptoms in 3. Although such a small series of cases is not statistically significant, the findings suggest that the reflex spasm that occurs immediately after pulmonary embolism can be modified by stellate block. It is possible that the relief of spasm may diminish the area of lung that becomes infarcted. After an indeterminate period of about 12 hours, however, it has been found that stellate block is useless as relief, either because the spasm has subsided or because the effects of the occlusion have become too firmly established.

It is pointed out that atropine may be used in the early treatment of pulmonary embolism to inhibit vagal impulses and papaverine may be used to relax smooth muscle. These drugs are administered alone or in conjunction with other therapeutic measures. The fact that papaverine has a widespread effect and does not prevent smooth muscle from responding to stimuli would make its use seem less desirable than the more localized and complete effects of stellate block.

It is possible that in carrying out the procaine block some of the solution may diffuse beyond the stellate ganglion and involve an indeterminate number of the upper-thoracic sympathetic segments. It is felt that this would augment rather than diminish the relief in spasm in the pulmonary tree brought about by stellate block alone. (New England J. Med., 19 April '51, H. H. Faxon et al)

* * * * * *

Pertussis - Clinical Comparison of the Newer Antibiotics: Pertussis has long been known for its remarkable resistance to preventive as well as

therapeutic efforts. The most effective agents in vitro have proved to be too toxic in vivo to be of general use. Consequently, the agents of lesser effectiveness but of greater safety have been chosen for investigation. A comparative study of these agents was made by the authors during a recent pertussis epidemic in their community. Their purposes were: (1) to determine the comparative clinical effect of aureomycin, chloramphenicol and terramycin in uncomplicated pertussis and (2) to determine the effective minimal dose for these drugs. For the sake of completeness, a group of 28 streptomycin-treated patients from an earlier epidemic was included.

In order for a patient to be included in the study, 2 of the following criteria for diagnosis had to be fulfilled in order to distinguish between a severe bronchitis and a true pertussis: (1) isolation of Hemophilus pertussis organism, (2) leukocytosis with absolute lymphocytosis, (3) observation of typical paroxysmal coughs by 2 or more qualified observers. A careful history was taken in each instance with particular attention being paid to the exact time of onset of catarrhal symptoms, history of recent exposure to the disease within the family and the immunological status of the child in regard to pertussis, in an attempt to determine the effect of pertussis immunization on the course of the disease.

From the current epidemic of roughly 1,200 reported cases of pertussis in the community, 111 hospitalized cases were selected to determine the comparative clinical effect of aureomycin, chloramphenicol and terramycin on uncomplicated pertussis. To complete the study, a group of streptomycin-treated patients and a group of untreated patients were selected from the hospital records and were analyzed on the basis of the current investigation, bringing the total number of cases reported to 160.

The results noted in the streptomycin-treated group were, on the whole, disappointing. The temperature remained elevated twice as long as in the control group, a phenomenon which is rather commonly observed in other patients being treated with this drug. There was only a slight decrease in the whoop stage and the cough stage was not significantly altered. No untoward reaction, complications or sequelae were recorded, even though rather substantial doses (averaging 7.46 Gm.) of the drug were administered.

Aureomycin, chloramphenicol and terramycin are discussed as a group, since in this study their major actions were very similar. The most significant change noted was the reduction in the duration of the whoop stage by about 60 percent. It is noted that much of the severe damage caused by pertussis occurs during this stage and any shortening of this phase of the disease is desirable. With the exception of aureomycin, the average duration of elevated temperature was markedly shortened. Chloramphenicol and terramycin treated groups showed a slightly shorter cough stage. The total amount of drug needed for favorable clinical results varied only slightly among the 3 drugs, with the aureomycin group requiring slightly less, the chloramphenicol group second

and the terramycin group the most. The minimal effective dosage for all 3 groups was 50 mg. per Kg. per 24 hours. There was a small but consistent weight gain in all except the aureomycin treated group which showed an average weight lost of 1.4 ounces. This loss may be explained on the basis of slightly more frequent vomiting noted in this group. There was no significant change among the 3 groups in the period of hospitalization. The total length of the disease was shortened in all 3 groups, with the terramycin treated group showing the greatest change. In 5 cases in which all 3 drugs were given simultaneously, there was no significant change in results, suggesting that no advantage is gained by giving these drugs in combination.

It should be emphasized that the action of these drugs in this study was not as rapid or dramatic as reported by other investigators, possibly because of the slightly smaller daily dose. In addition, the H. pertussis organism may be demonstrating an altered sensitivity to the test drugs. Although aureomycin, chloramphenicol and terramycin all have a definite place in the treatment of pertussis and are, to date, the safest drugs available, it is believed that the specific drug for the complete and successful treatment of pertussis still lies in the future. (J. Pediat., April '51, C. E. Booher et al)

* * * * * *

Deterioration of DDT Emulsion Concentrates Upon Storage: Early in 1948 it had been noted that serious deterioration of DDT emulsion concentrates, accompanied by attack on the metal containers in which these were packed, were occurring in various shipments. In order to determine the causative factors and a means of remedy for these shortcomings, the Bureau of Ships initiated an investigation at its Industrial Test Laboratory with the end view of establishing specification requirements describing suitable concentrates and containers. It was found that the phenomenon accompanying concentrate and container failure was one caused by the effects of the iron container on the DDT itself. The metal catalyzed the decomposition of DDT into hydrochloric acid (among other products) which was extremely corrosive toward the container and in addition adversely affected the emulsifier component of the concentrate. Further, the attack was a self-propagating one in that the iron salts formed accelerated the DDT decomposition, and consequently increased the acidity of the product. Eventually the material became insecticidally ineffective and the container was seriously attacked.

Since the major cause of failure was the adverse effect of iron on DDT, the Laboratory studied the value of packaging this type product in lined pails. This investigation included a shipping test within the continental limits to simulate actual shipment and storage conditions. As a result of this study, preliminary findings have indicated that several phenolic type liners are suitable for prolonging the storage life of this insecticide and protecting the container. Although the liners are not completely satisfactory, since they are somewhat

brittle and will lose adhesion to some extent upon shock, tests indicated that nevertheless they will materially increase service life of concentrate and container. No existing manufacturer has adopted these coatings for Navy containers, despite efforts by the Bureau of Ships to effect adoption by the industry.

One approved manufacturer, Rohm and Haas, has been producing a satisfactory product from a stability standpoint through the use of acid acceptors which prevent destructive attack of the contents. This company has been furnishing the bulk of Navy requirements for this material and it is reasonable to assume that all stocks of Rohm and Haas material are in satisfactory condition. Samples of this supplier's product subjected to outdoor storage have been quite satisfactory after a 2 1/2 year period.

The Industrial Test Laboratory, Philadelphia Naval Shipyard, is presently investigating the reported deterioration of containers furnished by the Pacific Chemical Company. Pending completion of the investigation it has been directed that the product of the Pacific Chemical Company be withheld from issuance, although not all of the stocks from this company exhibit deterioration as yet. The Bureau of Ships suggests that stocks originating from the Rohm and Haas Company may be substituted.

The danger of deterioration of the material is in the containers themselves. Hazards to personnel are of minor nature requiring only moderate precautions to avoid inhaling pungent vapors of hydrogen chloride or spilling on the skin. The bulging of containers may become serious enough to cause spontaneous bursting, but this is not considered a serious hazard. Pressure within the container may be relieved by punching small holes in the top of each can. With the above stated precautions, it may be possible to retain deteriorated material on board until conditions permit jettisoning. (Preventive Med. Div., BuMed)

* * * * * *

Hemorrhagic Disease of the Newborn: A latent bleeding tendency is a physiologic peculiarity of every newly born infant during the first 5 to 6 days of its life. From the 1st to the 3d day there is normally a mild prolongation of coagulation time and of bleeding time; after the 3d day coagulation and bleeding times gradually decrease and reach normal values by the 6th day, as a rule. This physiologic tendency may under certain conditions assume pathologic proportions and become the underlying cause of more or less serious hemorrhages.

The exact etiology of the physiologic latent bleeding tendency is not known. Neither is it known what precipitates actual spontaneous hemorrhage in cases of true hemorrhagic disease. The discovery that there is regularly a marked fall in available plasma prothrombin during the first 3 days after birth and that this returns spontaneously to near normal values by the 6th day, made it seem probable that hypoprothrombinemia was the chief etiologic factor. There are, however, disturbing inconsistencies between clinical manifestations and laboratory findings.

While hemorrhagic disease does occur in the presence of hypoprothrombinemia, this is not always the case; extremely low plasma prothrombin levels are not always accompanied by hemorrhage, and hemorrhagic disease is not always cured by raising the prothrombin level to normal through administration of vitamin K, nor prevented by maintaining prothrombin at a normal level through prophylactic administration of vitamin K to the mother during labor or to the infant after birth. The indications are that another factor or other factors as yet undiscovered are operative in hemorrhagic diseases.

The treatment of hemorrhagic disease is difficult to evaluate, because clinicians do not use uniform criteria regarding what is and what is not hemorrhagic disease, and because in the majority of cases bleeding tends to stop spontaneously and whatever treatment has been used sometimes receives unwarranted credit. It is well established that hypoprothrombinemia of the newborn can be prevented either by giving vitamin K to the mother during labor or to the infant at birth, and that an existing hypoprothrombinemia can be promptly corrected by giving vitamin K. In addition, there are some clinical reports that indicate a lower incidence of hemorrhagic manifestations when vitamin K was routinely used as a prophylactic measure. On the other hand those who are not convinced of the essential importance of this factor have considerable evidence that casts doubt on the efficacy of vitamin K in preventing or curing hemorrhagic manifestations. However, there is complete agreement on the harmlessness of vitamin K, and its cost is low. The consensus is that to be on the safe side it should be given routinely to the mother during labor, and, in cases in which delivery has been difficult and in premature deliveries, to the infant at birth as well.

Vitamin K alone in the curative treatment of hemorrhagic disease is questionable, if the bleeding is of a serious nature. In such cases there is strong possibility that in spite of successfully raising the prothrombin level to normal, the bleeding will persist. In all cases of severe or even moderately severe hemorrhage a transfusion should be given immediately whether the bleeding is known to be due to hemorrhagic disease or not.

The prevention of hypoprothrombinemia is accomplished either by giving the mother one of the vitamin K-like synthetic preparations, 1 mg. daily by mouth during the last 2 weeks preceding delivery or by giving her 4 mg. intramuscularly during labor, preferably 2 to 4 hours before delivery. In case the mother has not been given vitamin K in this manner, prevention can still be accomplished by giving the infant 1 to 2 mg. intramuscularly immediately after birth. If the infant is premature or the delivery is a difficult one, many advocate giving vitamin K to the infant, even though the mother has been treated. (Postgrad. Med., April '51, A.H. Parmelee)

* * * * * *

From the Note Book

1. Dr. Richard L. Meiling, Chairman of the Armed Forces Medical Policy Council of the Department of Defense, has submitted his resignation. Dr. Meiling will return to Ohio State Medical School. (Washington News, J. A. M. A., 28 April '51)

2. Development of an irradiated tuberculosis vaccine will be supported by a research grant made to Dr. A. Milzer of Michael Reese Hospital, Chicago. Preliminary studies indicate that an irradiated vaccine will offer many advantages over the standard BCG vaccine now in use. (News Release, FSA, PHS, NIH, 2 May '51)

3. Enucleation of the eye and the cosmetic appearance of the patient following enucleation is discussed in A. M. A. Archives of Ophthalmology, April 1951, A. M. Culler.

4. Not only did Rene Theophile Hyacinthe Laennec make an invaluable contribution to medical practice with his invention of the stethoscope, but he also provided classic descriptions of tuberculosis, lobar pneumonia, pleurisy, bronchiectasis, pneumothorax, emphysema and hydatid cysts of the lungs, and characterized the diseases now known as Laennec's cirrhosis and Laennec's thrombosis. (Postgrad. Med., April '51)

5. "The Diagnosis and Surgical Treatment of Cervical Lesions of the Intervertebral Disc" is discussed in the Journal of the International College of Surgeons, April '51 by E. Walker et al.

6. Immunization in the young infant is discussed by J. C. Peterson and A. Christie. (A. M. A. Am. J. Dis. Child., April '51)

7. The third annual Naval Industrial Health Conference held April 22-27 in Atlantic City with the joint Industrial Health Conference of the National Associations of Industrial Physicians and Surgeons, Industrial Hygienists, Industrial Dentists and Industrial Nurses was an unqualified success. The 116 delegates came from naval industrial plants, the shipyards, air stations, ordnance plants, research centers and supply depots which provide the logistic support for the Fleet. Representatives from the U. S. Army, U. S. Air Force, Royal Navy and Royal Canadian Navy were also present. (BuMed PIO, 2 May '51)

8. A symposium on the evaluation of newer technical aids in the diagnosis and treatment of intracerebral lesions is presented by W. McK. Craig et al. (Proc. Staff Meet. Mayo Clin., 11 April '51)

9. Methods for inducing breathing in newborn infants who are threatened by asphyiation because of faulty lung action will be investigated with the aid of a

Public Health Service grant by Dr. Peter Gruenwald, of Beth-El Hospital, Brooklyn. In a previous investigation, Dr. Gruenwald reported that surface tension counteracts entrance of air into the lungs, and that this resistance can be reduced by the medical use of detergents. Purpose of the present study is to test detergents in clinical use over a continued period and also to investigate the shock condition that develops in some newborn infants, stemming from oxygen deficiency and affecting vital organs. (News Release, FSA, PHS, NIH, 2 May '51)

10. A very good discussion of retropubic prostatectomy appears in J. A. M. A., 28 April 1951, J. R. Hand and A. W. Sullivan.

11. A gift of $1,500,000 has been presented by the General Motors Corporation to the University of Michigan for the establishment of the Institute of Industrial Health, Ann Arbor, Mich. (Industrial Health Monthly, May '51)

12. "Epidemic Diarrhea of Infancy" is discussed in Journal of Pediatrics, April 1951, A. D. Rubenstein and S. A. Britten.

13. The Use of Dromoran for Preoperative Medication" appears in Anesthesiology, March 1951. (V. K. Stoelting et al)

14. Bio Sciences Group, ONR, has completed contract negotiations on the following projects to be carried out under various investigators: "Research in the Field of Distribution and Identity of Yeasts on Normal Skin in Relation to Blastomycotic Infections," "Physical Methods of Virus Inactivation," "Artificial Respiration,""Investigations into the Processes of Protein Synthesis and Degradation in Living Bacteria" and "Studies on Plasma Substitutes."

15. A discussion of viruses appears in Scientific American, May '51, F. M. Burnet.

16. American boys entering employment at age 18 have 66 chances in 100 of living to the retirement age of 65. For their grandfathers who started work around the turn of the century the chances of attaining age 65 were only 51 in 100. (Am. J. Surg., May '51)

17. V. H. Haas discusses "Medical Aspects of Civil Defense in Biologic Warfare" in J. A. M. A., 24 March 1951.

* * * * * *

BUMED CIRCULAR LETTER 51-61 19 April 1951

From: Chief, Bureau of Medicine and Surgery
To: Holders of the Bulletin of BuMed Circular Letters

Subj: BuMed circular letter; cancelation of

1. Having served its purpose, BuMed Circular Letter No. 45-142 concerning utilization and modification of Medical Department allotments is canceled.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

* * * * * *

BUMED CIRCULAR LETTER 51-62 20 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Attached

Subj: Morbidity Report - DD Form 442

Ref: (a) Par 35D3 ManMedDept (1945 Edition)
(b) BuMed C/L 50-79
(c) Instructions Governing Individual Statistical Report of Patient (NAVMED-F) (NAVMED P-1313) as amended by BuMed C/L 51-21
(d) Joint Armed Forces Diagnostic Nomenclature (NAVMED P-1294)

Encl: (1) Copies of subject form

1. Effective 1 June 1951, reference (a) and paragraph 2 of reference (b) are cancelled.

2. This letter, which will not be printed in the Navy Department Bulletin, contains information and detailed instructions for the preparation and forwarding of subject form. The new form DD 442 has been adopted for use in the Department of Defense and replaces the Monthly Morbidity Report, NavMed 582.

* * * * * *

BUMED CIRCULAR LETTER 51-63 20 April 1951

From: Chief, Bureau of Medicine and Surgery
To: Hospitals and Infirmaries

Subj: Beds and Patients Report - DD Form 443

Ref: (a) Par 5111, ManMedDept (1945 Edition)
(b) BuMed C/L 50-35
(c) BuMed C/L 50-99
(d) BuMed C/L 51-12
(e) BuMed C/L 50-15
(f) BuMed C/L 50-41a
(g) BuMed C/L 50-28
(h) BuMed C/L 50-79
(i) BuMed C/L 50-80
(j) BuMed C/L 50-139
(k) SecNav ltr of 9 March 1951, NDB No. 51-161, 15 March 1951, Semi-Monthly Edition
(l) Art. 23-213(3), Instructions Governing Individual Statistical Report of Patients (NavMed P-1313) as amended by BuMed C/L 51-21
(m) Art. 23-204, Instructions Governing Individual Statistical Report of Patients (NavMed P-1313) as amended by BuMed C/L 51-21

Encl: (1) Copies of subject form

1. Effective 1 June 1951, references (a), (b), (c) and (d) are cancelled.

2. This letter, which will not be printed in the Navy Department Bulletin, contains information and detailed instructions for the preparation and submission of subject report. DD Form 443 has been adopted for use in the Department of Defense and replaces the Report of Patients, NavMed I.

* * * * * *

BUMED CIRCULAR LETTER 51-64 20 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Attached

Subj: Outpatient Report - DD Form 444

Ref: (a) Par 4111, ManMedDept. (1945)
(b) BuMed C/L 47-150

(c) BuMed C/L 49-45
(d) BuMed C/L 51-51

Encl: (1) Copies of subject form

1. Effective 1 June 1951, references (a), (b) and (c) are cancelled. Paragraph 9 of reference (d) is modified so as to refer to this circular letter rather than BuMed C/L 49-45.

2. This letter, which will not be printed in the Navy Department Bulletin, contains information and detailed instructions for the preparation and submission of subject report. DD Form 444 has been adopted for use in the Department of Defense and replaces the Monthly Summary, NavMed 669, reference (a) and the Annual Report of Immunizations, reference (b).

* * * * * *

JOINT LETTER

BUMED CIRCULAR LETTER 51-65 23 April 1951

From: Chief, Bureau of Medicine and Surgery
Commandant of the Marine Corps

To: All Ships and Stations

Subj: Expenses of preparation and encasement of remains; increase in maximum allowance on

Ref: (a) Part III, Chapter 4, Manual Medical Department
(b) Part IV, Chapter 1, Manual Medical Department
(c) Chapter 55, Part K, Volume II, Marine Corps Manual

1. Effective in cases where death occurs on or after 1 May 1951, the allowance for expenses incurred for preparation and encasement of remains of deceased Navy and Marine Corps personnel (references (a) and (c)) and those civilian employees specified in Paragraph 4130 of reference (b) will be increased from a maximum of $200 to a maximum of $300.

2. Appropriate corrections are requested wherever reference to this allowance is made in the Manual of the Medical Department, the Marine Corps Manual, and all other existing instructions.

H. L. Pugh C. B. Cates

* * * * * *

JOINT LETTER

BUMED CIRCULAR LETTER 51-66 23 April 1951

From: Chief of Naval Personnel
Chief of Bureau of Medicine and Surgery

To: All Ships and Stations

Subj: Courses of Instruction for Medical Officers in Aviation Medicine and Submarine and Diving Medicine

Ref: (a) NavPers 15795, List of Navy Schools and Courses

1. Henceforth, medical officers of the Regular Navy and Naval Reserve making application to the Bureau of Medicine and Surgery for assignment to courses of instruction in Aviation Medicine or Submarine and Diving Medicine shall include in their requests the applicable service agreement indicated below:

a. For a course in Aviation Medicine:

"I agree to remain on active duty for 1 year following the period of service for which I am currently obligated, or for 1 year following completion of the course, whichever is longer."

b. For a course in Submarine and Diving Medicine:

"I agree to remain on active duty for 18 months following the period of service for which I am currently obligated, or for 18 months following completion of the course, whichever is longer."

2. In considering an applicant for assignment to one of the above courses, the Bureau of Medicine and Surgery interprets "currently obligated service" as that service for which the applicant has previously voluntarily agreed to serve, or that service for which he may be required to serve, in accordance with established policy, regulation, or law.

3. Information on continuing availability of subject courses is published in the semiannual revisions of reference (a), and by special announcement when the circumstances require.

L. T. Dubose H. L. Pugh

* * * * * *

BUMED CIRCULAR LETTER 51-67 Restricted

* * * * * *

JOINT LETTER

BUMED CIRCULAR LETTER 51-68 24 April 1951

From: Chief of Naval Personnel
Chief of the Bureau of Medicine and Surgery
Commandant, U. S. Marine Corps

To: All Ships and Stations

Subj: Claims for compensation, pension, or hospitalization, filed with Veterans Administration on persons retired, discharged, or released for physical disability.

Ref: (a) BuMed Circular Letter 50-100 of 13 September 1950.

1. This letter cancels and supersedes reference (a).

2. The attention of all activities designated to separate personnel is invited to a requirement in law which necessitates the execution of a claim for compensation, pension, or hospitalization to be filed with the Veterans Administration by every member of the naval service who is discharged, retired, or released from the active service, by reason of a physical disability, or in lieu thereof the signing of a statement by such member to the effect that he has had his claim rights explained to him. Section 104 (PL 346 - 78th Congress) is quoted herewith in pertinent part for information and compliance.

> "No person shall be discharged or released from active duty in the armed forces until his certificate of discharge or release from active duty and final pay, or a substantial portion thereof, are ready for delivery to him or his next of kin or legal representative; and no person shall be discharged or released from active service on account of disability until and unless he has executed a claim for compensation, pension or hospitalization, to be filed with Veterans Administration or has signed a statement that he has had explained to him the right to file such claim: Provided, that this section shall not preclude immediate transfer to a Veterans' facility for necessary hospital care, nor preclude the discharge of any person who refuses to sign such claim or statement; And provided further, That refusal or failure to file a claim shall be without prejudice to any right the veteran may subsequently assert."

3. In accordance with the provisions of this section of the law all commanding officers connected with activities designated to separate personnel will insure that no person shall be discharged, retired, or released from the active service

by reason of physical disability, until he has had explained to him his right to file a claim for compensation, pension, or hospitalization.

4. When a claim for compensation, pension, or hospitalization is submitted by an individual in accordance with this letter, the pension claim shall be forwarded to the Veterans Administration regional office having jurisdiction over the locality in which the individual intends to reside, accompanied by a photostatic or typewritten copy of the entire Health Record (except cover) and a certified copy of such of the following records as may have been completed:

(a) Standard Form 88, with dental section completed, reporting the separation physical examination.

(b) NavMed-M

(c) Clinical Board report.

(d) Final orders in the case of persons discharged or released from active service in accordance with the provisions of Title IV of the Career Compensation Act.

5. If the individual does not desire to file a claim he shall be requested to sign a statement on a page of his medical record as follows:

> "I have been told that I am to be (discharged)(retired) or (released) from active duty in the naval service, by reason of physical disability and have been advised of my right to file a claim with the Veterans Administration for compensation, pension, or hospitalization. I have decided not to submit a claim for any of those benefits at this time. I understand that my failure to file a claim at this time does not prejudice any right to submit a claim in the future."

This statement does not constitute a waiver of any rights and should not be referred to as a waiver. The signed statment should be attached to and forwarded to the Bureau of Medicine and Surgery with the Terminated Health Record for filing. If at at later date the veteran decides to submit a claim for benefits, the statement will be forwarded to the Veterans Administration with a copy of his medical record.

6. If an individual who is being discharged, retired, or released from the active service, by reason of physical disability refuses to sign the statement referred to above, the unsigned statement shall be forwarded to the Bureau of Medicine and Surgery with a notation to that effect.

7. Additionally, it should be explained to each individual that any hospitalization or benefits which may be required or desired from the Veterans Administration

at a later date are generally contingent upon the filing of such claim. A delay in filing a claim may result in the eventual loss of monetary benefits or deprivation of hospitalization at a critical time.

L. T. Dubose C. B. Cates C. J. Brown

* * * * * *

JOINT LETTER

BUMED CIRCULAR LETTER 51-69 24 April 1951

From: Chief of Naval Personnel
Chief of Bureau of Medicine and Surgery
Commandant of the Marine Corps

To: Commandants All Naval Districts and River Commands, CLUS
Commanding Officers, Naval Hospitals, CLUS
(Copy to: All Ships and Stations via Navy Department Bulletin)

Subj: Procedures for transfer of patients unfit for duty from Naval Hospitals to Veterans Administration Hospitals

1. The President has recently approved and directed the Secretary of Defense to implement a proposal to hospitalize military patients under certain conditions in Veterans Administration hospitals. The purpose of present directive is to inform action addresses of the administrative procedures to be followed in carrying out this program.

2. The categories of military patients who are to be transferred to Veterans Administration facilities include those on the active list who have appeared before a Physical Evaluation Board and who require specialized medical care including rehabilitation for such conditions as severe injuries to the nervous system including quadriplegics, hemiplegics and paraplegics; neurological disabilities including poliomyelitis with disability residuals and degenerative diseases of the nervous system; the blind and the deaf who require definitive rehabilitation; major amputees; those requiring extensive plastic or thoracic surgical procedures; the tuberculous and the neuropsychiatric patients; and any other type patient in whose case it is considered that the individual will not be able to return to duty and render useful naval service, providing prolonged hospitalization will be required. In considering transfer of any such patient, however, due consideration shall be given to the welfare of the patient and each case must be considered on an individual basis.

3. When a Physical Evaluation Board has completed its hearing, in the case of a member included in the category described in paragraph (2), the commanding

officer of the hospital concerned shall be notified. The commanding officer of the hospital will submit a dispatch request to the Bureau of Medicine and Surgery, information Bureau of Naval Personnel or the Commandant of the Marine Corps as applicable, and Armed Services Medical Regulating Office (short title ASMRO), for bed designation in a Veterans Administration hospital. This dispatch request will include full name, rank or rating, service number, race and sex, diagnosis, home of record, patient's choice, if any, of location for Veterans Administration hospitalization, estimated length of hospitalization, and a statement as to whether or not a previous request for Veterans Administration bed is pending. Upon approval of transfer and bed designation by the Bureau of Medicine and Surgery, and the Bureau of Naval Personnel or the Commandant of the Marine Corps, as appropriate, transfer orders will be issued. The Bureau of Naval Personnel will issue transfer orders for naval officer personnel direct to the officer patient concerned via the commanding officer of the losing naval hospital, and transfer authorization for the naval enlisted patient direct to such commanding officer. The Commandant of the Marine Corps will issue transfer orders for both officer and enlisted Marines direct to the individual concerned via the commanding officer of the losing naval hospital.

4. When a member, either officer or enlisted, who has been found unfit for service by a Physical Evaluation Board, is subject to transfer to a Veterans Administration hospital under the policy outlined in paragraph (2) above, and is deemed ready for movement thereto by the commanding officer of the naval hospital concerned, the designation of a Veterans Administration bed for that member will be accomplished by the method described in paragraph (3) above. The transfer orders or authorization from Bureau of Naval Personnel or the Commandant of the Marine Corps will direct transfer of the member to a designated Veterans Administration hospital, and will constitute authorization for travel of self, and dependents and transportation of household effects if otherwise entitled thereto, as for a permanent change of duty station, in accordance with current travel regulations. The commanding officer of the losing naval hospital will execute the certificate required by Paragraph 7004-4, Chapter VII of the new Joint Travel Regulations, as appropriate.

5. The Commandant of the naval district in which the designated Veterans Administration hospital is geographically located, or in the case of Marines, the commanding officer of the activity designated by the Commandant of the Marine Corps, becomes the new commanding officer of the member upon his arrival at the Veterans Administration hospital. The member will be directed to report to the head of the Veterans Administration hospital for treatment. Naval members will report by letter to the district commandant for naval administrative purposes. The records and accounts of the patient being transferred will be forwarded either to the Commandant of the Naval District in which the Veterans Administration hospital is located or the Marine Corps activity designated. The Commandant, or Marine Corps activity, then becomes

the administrator of the patient for purposes of discipline, personnel accounting, pay, clothing, final separation or retirement, and other routine military matters.

6. No restriction is placed on the district commandant as regards authority to delegate administrative functions performed for naval members so transferred to Veterans Administration hospitals at his discretion to any naval activity within his jurisdiction which may be more conveniently located to the Veterans Administration hospital than is his district headquarters.

7. Where eventual separation or retirement is indicated by the recommended findings of the Physical Evaluation Board, the commanding officer of the losing naval hospital shall accomplish preliminary processing for release of the member from active duty insofar as practicable just prior to the member's discharge from treatment at the naval hospital, including counsel as to rights and benefits after separation or retirement, and preparation of claim for Veterans Administration disability compensation. This will enable final details of release to be accomplished by mail.

8. Those members whose active service is ultimately terminated while under assignment to a Veterans Administration hospital will receive appropriate orders at that time and will be entitled to travel and transportation allowances in the same manner as though terminated at a duty station, as prescribed by Joint Travel Regulations.

A. H. Dearing L. T. DuBose C. B. Cates

* * * * * *

BUMED CIRCULAR LETTER 51-70 24 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Continental Shore Stations Having Medical Corps Officers

Subj: Physical examination by naval medical officers of civilians recruited for overseas employment

Ref:
(a) Civil Service Handbook M-601 - "Instructions for Medical Officers of U. S. Civil Service Commission and Boards of U. S. Civil Service Examiners"
(b) Civil Service Handbook M-603 - "Handbook Covering Preparation of Physical Requirement Paragraphs and Related Instructional Material for Use in Passing on Physical Qualifications"
(c) Civil Service Handbook M-604 - "Medical Instructions for Boards of U. S. Civil Service Examiners in Connection with Indefinite Appointments to Positions Under Board Jurisdiction USCSC March 1951"

1. Within the next few weeks, a Navy Overseas Recruiting and Employment Office will be opened. This office will be located in San Francisco. It will recruit throughout the Continental United States to employ civilian personnel for Navy activities in the Pacific Overseas Areas, except Alaska.

2. Recruits will travel from the point of recruitment to their place of employment (Overseas) at Government expense. Travel will not be authorized unless the recruit, among other things, can meet the physical requirements commensurate with the position for which he is selected. A recruit, therefore, will be required to take a physical examination at the place where he is recruited. Standard Form 78 pre-employment physical examination form for Federal Civil Service employees is to be used for recording physical examinations of Overseas recruits. Return transportation at Government expense is authorized for recruits who are physically disqualified upon arrival or during employment at Overseas activities. The pre-employment physical examination is, therefore, of great importance.

3. Part 1, Section 7, of reference (a), should be consulted for information on "Foreign Outpost Duty." Reference (b) is helpful in the evaluation of the physical qualifications of the applicants. Reference (c), while it does not entirely replace M-601, should be procured, since it is the most recent issuance by the Civil Service Commission with reference to medical determinations.

4. At activities where copies of the references are not available and where the medical officer has had no previous experience in Civil Service employee's physical examinations, medical officers should contact the nearest naval activity having a Civil Service Examining Board and request advice and help from the medical officers of such commands. If further assistance is needed to procure information regarding physical examination for Civil Service employees, the following Regional or Branch Headquarters of the U. S. Civil Service may be contacted:

1st Region - Regional Headquarters, Boston, Mass.
2nd Region - Regional Headquarters, New York, N. Y.
3rd Region - Regional Headquarters, Philadelphia, Pa.
4th Region - Regional Headquarters, Washington, D. C.
5th Region - Regional Headquarters, Atlanta, Ga.
6th Region - Regional Headquarters, Cincinnati, Ohio
7th Region - Regional Headquarters, Chicago, Ill.
8th Region - Regional Headquarters, St. Paul, Minn.
9th Region - Regional Headquarters, St. Louis, Mo.
10th Region - Regional Headquarters, New Orleans, La.
11th Region - Regional Headquarters, Seattle, Wash.
12th Region - Regional Headquarters, San Francisco, Calif.
- Branch Regional Headquarters, Los Angeles, Calif.
- Branch Regional Headquarters, Honolulu, Hawaii

13th Region - Regional Headquarters, Denver, Colo.
14th Region - Regional Headquarters, Dallas, Texas

5. Authorized civilian recruitment officials will contact certain Medical Departments in connection with this recruiting program within the next few weeks. Medical Departments are urged to cooperate with these officials so as to insure the success of this recruiting program. Civilian recruitment officials should be advised as to the importance of keeping the Medical Department informed regarding probable number of applicants and the time they will present themselves.

6. It is requested that information as to the number of such applicants examined by Medical Department personnel be submitted to the Bureau of Medicine and Surgery in the out-patient report (DD 444) which will replace NavMed 669 in June 1951.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

* * * * * *

BUMED CIRCULAR LETTER 51-71 24 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals

Subj: Hospitalization of Department of Army and Department of Air Force Personnel on Active Duty

Ref: (a) BuMed Cir Ltr No. 51-49

1. Reference (a) is hereby modified by deletion of paragraph 4 thereof, and substitution of the following:

"4. Addressees having Army Administrative (Technical Service) Units or Army Liaison Units attached are authorized to report in summary total on DD Form 7, (Report of Treatment Furnished Pay Patients, Hospitalization Furnished) the sick days applicable to Army enlisted patients, active duty (Line 44 of Ration Record). Addressees having Air Force Liaison Units attached are authorized to report sick days applicable to Air Force enlisted patients, active duty (Line 48 of Ration Record) in corresponding manner. DD Forms 7 shall indicate the total number of days authorized leave, preceded by the letters "EL". If the latter number of days is not in agreement with that reported in Column III(b) of the Ration Record, appropriate explanation shall be made on the DD Form 7."

2. No change in the present procedures for reporting sick days applicable to Army and Air Force officer patients is contemplated.

H. L. Pugh

BuMed Circular Letter 51-71 will not be printed in the Navy Department Bulletin.

* * * * * *

BUMED CIRCULAR LETTER 51-72 27 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Medical and Hospital care for minor children of deceased Naval personnel

1. The unmarried child or children under twenty-one (21) years of age of deceased Naval or Marine Corps personnel are eligible for medical and hospital care on the same basis and to the same extent as is now provided by paragraph 415.1 of the Manual of the Medical Department for the widows of such deceased personnel.

H. L. Pugh

* * * * * *

BUMED CIRCULAR LETTER 51-73 30 April 1951

From: Chief, Bureau of Medicine and Surgery
To: All Holders of the Bulletin of BuMed Circular Letters

Subj: Chapters 3 (General Duties of Medical Corps Officers) and 23 (Reports, Forms, and Records); Manual of the Medical Department

1. Chapters 3 and 23 of the Manual of the Medical Department are being distributed for insertion in the Manual.

2. Sections VII (Records Retirement) and VIII (Release of Information From Records) of Chapter 23 have not been printed as yet, and will be forwarded at a later date. Paragraph 12B11 (Disposition of Medical Department Records) of the 1945 edition of the Manual of the Medical Department shall be retained as in effect until Section VII is received.

3. Upon receipt of Chapter 23 the following BuMed Circular Letters shall be canceled:

BuMed Cir Ltr	Covered by ManMedDept Art.
47-76	23-111
47-131	23-109
47-133	23-6 and 23-7
48-59	23-255
48-112	23-7(2)
48-119	23-126
49-43	23-215
49-49	23-133
49-55	23-121
49-110	23-215
49-135	23-135
50-45	23-36
50-54	23-10
50-76	23-127
50-83	23-148
50-84	23-149
50-86	23-18 and 23-23
50-89	23-38
50-103	23-183
50-105	23-184
50-116	23-183

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

* * * * * *

BUMED CIRCULAR LETTER 51-74 3 May 1951

From: Chief, Bureau of Medicine and Surgery
To: All Medical Department Activities and Facilities Ashore

Subj: Annual Estimates of Expenditures, Fiscal Year 1952, Appropriation 1721002, Medical Care, Navy, 1952

Ref:
(a) BuMed Ltr BUMED-232 Ll-1-1951-EN(1) of 20 Apr 1950
(b) BuMed Ltr BUMED-232 Ll-1-1951-EN(2) of 20 Apr 1950
(c) BuMed C/L 46-182
(d) BuMed C/L 48-145 (modified by C/L 49-27
(e) BuMed C/L 50-101
(f) BuMed C/L 51-58
(g) BuMed Ltr BUMED-233 L20-1 of 20 Feb 1951
(h) BuMed Ltr BUMED-233 L20-1 of 4 Apr 1951

(i) Para. 23001-2(3), BuSandA Manual
(j) Para. 23101, BuSandA Manual
(k) Para. 23859, BuSandA Manual
(l) Para. 71301, BuSandA Manual
(m) CNO Ltr OP-443-jd ser 69P44 of 12 Jan 1951

Encl: (1) Instructions for preparation of Annual Estimate of Expenditures at activities under the management control of the Bureau of Medicine and Surgery, with Schedule "A"
(2) Instructions for preparation of Annual Estimate of Expenditures at activities not under the management control of the Bureau of Medicine and Surgery.

1. References (a) and (b) are cancelled.

2. Activities under the management control of the Bureau of Medicine and Surgery shall prepare an informal annual estimate of expenditures for Fiscal Year 1952, under Appropriation 1721002, Medical Care, Navy, 1952, in accordance with instructions in enclosure (1) and schedule "A" thereto.

3. Medical department facilities located at activities not under the management control of the Bureau of Medicine and Surgery shall prepare an informal annual estimate of expenditures for Fiscal Year 1952, under Appropriation 1721002, Medical Care, Navy, 1952, in accordance with instructions in enclosure (2).

4. Estimates of expenditures for Fiscal Year 1952, shall be submitted to the Bureau as early as possible but not later than 1 June 1951.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

* * * * * *

NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Permit No. 1048
NavMed-369 - 5/51

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE. $300